

Stem Cell Research: Promise and Progress

The field of stem cell research has continued to advance at a terrific pace over the past year, with continued improvements in technology allowing us to interrogate the pathways underpinning development, injury, and repair of our cells, tissues, and organs. We have seen leaps forward in the translation of these advances into preclinical and clinical research. The International Society for Stem Cell Research (ISSCR) is committed to providing voice and visibility to this progress and to the global stem cell research community driving these efforts. This journal, *Stem Cell Reports*, launched just two years ago by the ISSCR, is an important part of this commitment. *Stem Cell Reports* has reflected progress in the field, developing quickly to provide a high visibility platform for scientific and medical discovery and building on the organization's Annual Meetings and International Symposia.

Over the past year, it has been very rewarding to see the breadth and quality of research included in *Stem Cell Reports*. With reproducibility vital to the progress of the field, I commend the commitment to review and publish studies that debate or confirm existing literature. I would like to take this opportunity to recognize the driving force behind this success, the strong editorial leadership provided by our Editor in Chief Christine Mummery and Associate Editors Nissim Benvenisty, Thomas Graf, Hideyuki Okano, and David Scadden, and the support from Managing Editor Yvonne Fischer and the teams at ISSCR headquarters and our publishing partner, Cell Press.

As an organization, the ISSCR seeks to promote high scientific and ethical standards. The ISSCR's "Guidelines for the Conduct of Human Embryonic Stem Cell Research" and "Guidelines for the Clinical Translation of Stem Cells" have provided critical direction and support for researchers to this end. Over the past year and a half, a task force has been reviewing and building on these guidelines to recognize advances in technology as well as ethical and social perceptions. In the coming months, the task force will call for comment on a draft document from all members of the research community, and I urge all of you to take this opportunity to provide your input. I believe this effort is truly important and that these guidelines will continue to be highly influential. Since the original publication of the guidelines, our scientific knowledge has continued to evolve and progress, but the core principles remain the same: rigorous standards and integrity in all steps of the stem cell research enterprise.

Sharing our excitement in the field in an accurate and balanced way plays an important role in this enterprise, building trust and garnering public support. In parallel

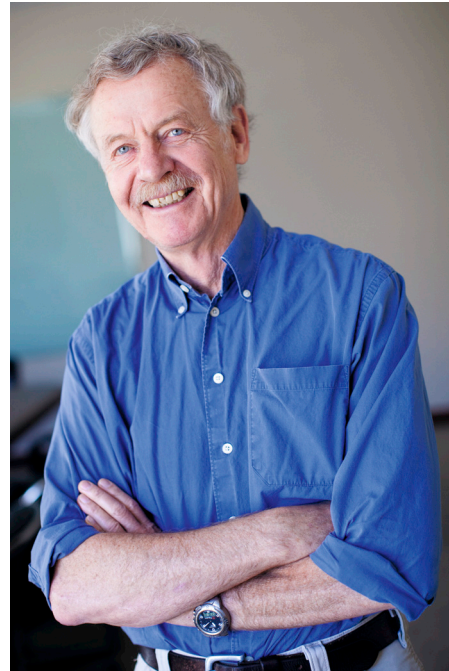


Figure 1. Rudolf Jaenisch, MD, ISSCR President, 2014-2015. Photograph: Kathleen Doohar.

with efforts for professional guidance, the ISSCR has focused over the past year on the launch of a new and expanded *Closer Look at Stem Cells* website (<http://www.closerlookatstemcells.org>). The website is a cornerstone in the society's ongoing commitment to public education and outreach, engaging visitors in stem cell science and sparking their interest in the progress of stem cell research across the globe.

The new-look site presents informational pages on basic stem cell biology, research, and clinical translation processes and provides deeper information on clinical trials and the use of stem cells in understanding specific health conditions—macular degeneration, multiple sclerosis, heart disease, and diabetes—with more pages planned. It includes the "Stem Cells in Focus" blog, which aims to make cutting-edge research exciting and accessible to non-scientists. We encourage you to visit the site and to look out for an upcoming article in this journal by the task force behind this project that will speak to the underlying issues that drive the need for this site, considerations in developing the content, and the role each of us can play. We hope you will point to the *Closer Look* website in your conversations with the public and share it with your



colleagues, research institutions, and other organizations with which you are affiliated.

It is always a pleasure to give voice to accomplishments in stem cell research. Each year, the ISSCR offers the McEwen Award for Innovation, the ISSCR Public Service Award, and the ISSCR-BD Biosciences Outstanding Young Investigator Award. At this year's ISSCR Annual Meeting in Stockholm, June 24–17, 2015, we recognize Irving Weissman, Stanford School of Medicine, and Hans Clevers, Hubrecht Institute, with the McEwen Award for Innovation for their long-standing contributions to the field and for their identification, prospective purification, and characterization of somatic tissue-associated stem cells and advancement of their research findings toward clinical applications. We recognize Alan Trounson with the Public Service Award for his contributions to the field as a visible and effective spokesperson; in particular, his early advocacy for the use of human embryonic stem cells in medical research. Additionally, it is with great pleasure that we present the seventh annual Outstanding Young Investigator Award to Paul Tesar, Case Western Reserve University School of Medicine, whose studies have shaped the global understanding of both pluripotent stem cell and oligodendrocyte biology. Paul's accomplishments would be impressive at any stage, but they are remarkable for someone so early in their career, and we look forward, not only to this year's presentation, but to ongoing research contributions.

To accompany the award celebrations, in this issue of *Stem Cell Reports*, we are delighted to present review articles from the past year's prizewinners. Azim Surani, Wellcome Trust/Cancer Research UK Gurdon Institute, winner of the 2014 McEwen Award for Innovation, reviews our current understanding of germline development and the extension of these paradigms to other areas of research (Surani, 2015). Valentina Greco, Yale University, winner

of the 2014 ISSCR-BD Biosciences Outstanding Young Investigator Award, reviews her laboratory's continued exploration of the interdependency of the skin stem cell and its niche (Mesa et al., 2015).

This year, we are proud to announce the establishment of a new ISSCR award, the Tobias Award Lecture, that will recognize promising basic hematology research as well as direct translational or clinical research related to cell therapy in hematological disorders from around the world. This award is sponsored by the Tobias Foundation, Sweden, a founding supporter of the Swedish bone marrow register, the Tobias Register, and supporter of research to explore the underlying mechanisms of hematological disease and improved treatment through the prestigious Tobias Prize and other research grants. The Tobias Award Lecture is a wonderful complement to our existing awards and an opportunity to acknowledge an area of stem cell research that illustrates the power of stem cells in medicine.

Finally, we hope that you enjoy the research contained within this issue, in addition to past and future issues. *Stem Cell Reports* continues to reflect the energy and advancement in the field, and we hope that you are as excited as we are about what the next year will bring.

REFERENCES

Mesa, K.R., Rompolas, P., and Greco, V. (2015). The dynamic duo: niche/stem cell interdependency. *Stem Cell Reports* 4, this issue, 961–966.

Surani, M.A. (2015). Human germline: a new research frontier. *Stem Cell Reports* 4, this issue, 955–960.

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